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ABSTRACT

The link between writing and the development of reasoning abilities, and implications for the college curriculum are discussed. The developmental models/theories of Piaget, Kohlberg, Gilligan, and Perry are described. Perry identifies a level of cognitive development called "dualism," which is a tendency to view the world in absolute, binary terms. Through interviewing students at the end of their freshman year, Perry determined that few were dualistic, although many of the students described themselves as dualistic before college. The "optimal match" hypothesis suggests that instruction that challenges the students' current thinking structures will have the greatest impact on motivation and learning. Specifically, the optimal level of challenge is one "stage" or position above the students' present level. In Perry's model, this would mean helping the dualistic student understand and accept the possibility of multiple frames of reference. Initially this might be accomplished by asking students to rewrite an essay for several different audiences; later they can be assigned exercises requiring reading or listening to, and then summarizing a variety of opinions on a topic. Journal writing would provide a complementary outlet for students' emotional responses to course material and its intellectual demands. (SW)

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DEVELOPMENT IN COLLEGE:
PERSPECTIVES, PROCESSES, AND REFLECTIONS ON THE ROLE OF WRITING

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DEVELOPMENT IN COLLEGE:
PERSPECTIVES, PROCESSES, AND REFLECTIONS ON THE ROLE OF WRITING

J. Kurfiss

Human development models offer an optimistic view of human nature in which the individual is seen as a dynamically changing being, striving to make sense of his or her experience. Cognitive developmental models help place student's thinking on a progressive continuum from simple and egocentric to complex, relativistic and context-sensitive. Thus they provide a diagnostic framework for understanding students' learning difficulties, and have shown promise as guides for designing instruction that helps students attain greater cognitive maturity.

Research on student development has shown that generally, seniors are less authoritarian, egocentric, and ethnocentric than freshmen (Plant, 1965), and are also more personally integrated, responsible, autonomous, religiously liberal, and theoretically oriented (Chickering, 1969; Feldman and Newcomb, 1969; Perry, 1970). Although originally conceived as personality variables, many of these characteristics have strong intellectual and value components which have been charted developmentally in recent years. Thus the changes reported in earlier studies can be reinterpreted in the context of developmental models such as those described in this paper. They can also be seen as shaped by pressures in the college environment--not the least of which are those related to students' written work.

Piaget gives us a theory of development of cognition, culminating in the ability to reason in abstract, symbolic, and hypothetical terms. Although Piaget originally described formal operations as characteristic of adolescent thought (Inhelder and Piaget, 1958), recent research indicates that in fact formal operational thinking is relatively uncommon, even among college-bound youth and adults. At the college level we see students using reasoning characteristic of both the third (concrete operational) and the last (formal operational) stage in Piaget's developmental sequence, as well as students who appear to be in transition between the two (Arons, 1976; Carpenter, 1980; McKinnon, 1976; McKinnon & Renner, 1971). Concrete thinkers can reason only about concrete things or events--they can consider the reverse of an action or simple relationships (such as serial or chronological ordering) among actions or events, and they can categorize on the basis of concrete features of events or things. But they are not skilled at considering the relationships between ideas, propositions, or indeed, relationships. Their thinking is egocentric in the sense that they have difficulty imagining the psychological world of others who differ from themselves. Thus when writing, they will have difficulty considering the needs of an audience unlike themselves; they may be able to describe a series of events but will be unable to interpret the events within an appropriate context. They will have trouble discussing abstract ideas, preferring to use lists of concrete nouns, remain almost exclusively at the level of particulars, and focus on themselves as subject even when the topic demands a larger perspective (Lunsford, 1980).

In a reasonably stimulating and supportive intellectual environment, adolescents and young adults can progress to the stage which Piaget calls formal operations. Attainment of formal operations is marked by the ability to reflect upon one's own thought and that of others, and hence to consider implications of ideas and to identify contradictions between them. Formal reasoning also encompasses the ability to formulate generalizations, test hypotheses systematically, and to argue from hypothetical premises. A further development is the ability to establish hierarchical and other relationships necessary for coherent organization of written work (Spear, in press) -- necessary for success in college, and required for the universal, abstract thinking our next theorist, Lawrence Kohlberg, suggests is the "highest" developmental level in the domain

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of moral reasoning.

Kohlberg (1969) describes stages in the development of moral reasoning--ways in which individuals rationalize decisions they recommend when faced with moral dilemmas. In the first two stages, or pre-conventional level, reasons are based on immediate gains to the self. In the second, conventional level (Level II), moral decisions are rationalized on the basis of desires and needs of others, first in terms of what will win social approval, and later in terms of society's expectations as exemplified in the legal system (the "law and order" frame of reference).

In Kohlberg's last two stages, termed post-conventional or Level III, what is (the law) becomes differentiated from what ought to be (principles such as fairness, justice, honesty, etc.). The PROCESS of law-making is distinguished from the outcomes, and in many societies, mechanisms for changing unjust practices are built into the "social contract" (as is the case with the U.S. Constitution). As the individual learns to consider multiple, abstract perspectives, systems of law, values, and ideology are recognized as, to some extent, dependent upon the cultural context which generated them. However, Kohlberg has made the strong claim that there are "absolute," universal principles and human rights which underlie our sense of what is "right," and that value judgments based on an appeal to these abstract principles represent the highest form of moral reasoning, stage 6 in his model (Kohlberg, 1969). Tomlinson-Keasey's work (1974) suggests that attainment of formal operational reasoning in Piaget's terms is a necessary though not sufficient condition for the emergence of Kohlberg's social contract orientation, or stage five. Level II reasoning is common among college freshmen and sophomores.

Carol Gilligan (1982) has critiqued this position, based on interviews with women. She found that the "principles" guiding moral decisions of women are personal responsibility and the need to balance caring for self and others, more often than general principles and rights, reasons which characterized responses of male interviewees. She argues that judgments based on the concerns, needs, and circumstances of individuals and groups affected by a decision are as mature as those based on rights and principles, even though they take "concrete" aspects of the situation into account, and are therefore scored at the conventional level in Kohlberg's original scheme. (Note that the ability to speculate about the possible consequences of a decision for all those involved requires hypothetical reasoning, a characteristic of formal operational thinking in Piaget's terminology.)

Gilligan's argument is based in part on her finding that women contemplating abortions used contextual reasoning in discussing their own situations (originally interpreted as "reverting to lower-stage reasoning"), although they used post-conventional reasoning when responding to Kohlberg's hypothetical moral dilemmas. She also draws on the framework offered by William Perry, who chronicled the development of relativistic thinking and the ability to commit oneself to a course of action in a relativistic context.

Perry (1970) conducted two four-year longitudinal studies of Harvard students in the late 1950's and early 1960's. From his extensive interviews, he formulated a stage model describing the progression of students' beliefs about the nature, structure and origins of knowledge, the role of authority in defining knowledge, and students' own relationships to it as they formulated their world-views and their identities. Although Perry describes nine major epistemological positions plus two alternative pathways, we will cluster the positions into four general (and extremely oversimplified) categories.

Perry's sequence of positions begins with a simplistic world-view based on the assumption that what one knows is True, what one values is Good, and what one is told by Authority figures to do is Right. This is an unreflective

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position, an unexamined life; one does not question Authorities and one simply accepts what one has "always known" to be true. Knowledge is viewed in discrete terms, and all knowledge is believed to come from Authorities. In college, the Authorities are the professors, and it is their duty to pass on their knowledge to the students. The student's responsibility is to absorb the knowledge, memorize it and recreate it as accurately as possible when asked to do so on a test. Correctness and quantity are valued in this early position; objectivity resides solely in facts. This student wants The Answers; he views knowledge strictly as product, with no sensitivity to the processes that went into its creation or the many factors or causes that must be considered in answering a particular question. Because of the tendency to view the world in absolute, binary terms, Perry termed this level "Dualism." Few of Perry's subjects were dualistic when first interviewed at the end of their freshman year, though many described themselves as having been this way "B.H." (Before Harvard).

A firmly held dualism is clearly antithetical to learning (other than rote memorization) as well as to good thinking and therefore to good writing, since it admits/invites little elaboration and precludes appreciation of the process of constructing knowledge. When information is presented, the dualistic student will record it dutifully in her notebook; but when asked to "think about it," discuss it, or write about it, she will be at a loss, for these things are the teacher's responsibility, not the students.' Furthermore, when various points of view on a topic are presented, the student easily becomes confused, since he assumes there is only one "correct" version of the subject; why mess with others that are incorrect or of merely historical interest? Shades of grey do not fit into a black-and-white structure; thus the fine points are generally lost on this type of student. At best, details will be recorded and given equal status with major generalizations, since all are equally validated by the Authority's attention to them in lecture or readings.

Multiplicity follows as the student gradually discovers that all learning is not a matter of obtaining and memorizing right answers, since some knowledge is controversial, uncertain, or as yet unknown. In many cases, this uncertainty is used to defend a nihilistic view that one opinion is as good as another, "since no one knows for sure." Early on in this level, the student assumes that written work is graded on such mysterious intangibles as "style" or "expression"; later, "bias" (agreement or disagreement with the students' views on the part of the instructor) is assumed to be the governing principle in grade assignment. A transition becomes possible when the student observes that balancing "opinion" (or theory) with factual evidence wins rewards in the form of good grades, at least from some instructors. Such experiences foster the development of a more mature concept of "objectivity."

Eventually, in the proper setting, the individual may construct a more balanced, "relativistic" position. Here the student understands knowledge as a constructive process in which authorities engage in a (probably never-ending) effort to understand and master their corner of the world. Knowledge is a function of its context or the point of view from which the matter is viewed, and learning is seen as an active process requiring a partnership between the learner and the teacher, who helps by creating conditions conducive to learning. And although everyone is entitled to his or her own opinion, some opinions clearly ARE better than others, since they are more logical, better supported by and consistent with evidence, comprehensive, or congruent with other appropriate criteria which can be agreed upon by reasonable people. The epistemological stance here is identical to that of the next level, "Commitment in Relativism," but the individual has not yet considered and wrestled with the need to make significant commitments in the context of a world where all knowledge -- including self-knowledge -- is dependent on one's frame of reference.

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Perry's most advanced subjects committed themselves to values and life choices in spite of their belief that all such choices were based on a necessarily limited understanding of their own situation and the world in general, and hence recognized that no one (except perhaps, themselves) could ultimately certify their commitments as "right." This period, termed Commitment in Relativism, describes those times in a person's life when he or she makes significant life choices, fully aware of the options being bypassed, having gone through a process of soul-searching involving rational consideration of alternatives.

While both the first and the fourth positions suggest firm stances and definite choices, they differ in that Commitment in Relativism presupposes recognition of the many possibilities and "roads not taken," and hence generates a more tolerant and understanding response to others who are different or who have made different choices. Unfortunately, studies in a variety of college settings strongly suggest that many students hold late dualistic or at best early multiplistic (positions 2 and 3 on Perry's 9-point scheme) views upon entering college, and few reach the higher two levels even by graduation (Kitchener & King, 1981; Mentkowski, Moeser, & Strait, 1983; Strange & King, 1981). At the same time, it is apparent that the world-view of contextual relativism is implicit in most critical thinking tasks as they are formulated in secondary education and in college. In fact, many aspects of the higher levels of all these theories overlap considerably with commonly stated goals of higher education--from tolerance for cultural diversity to problem-solving ability and ethical maturity (Chickering, 1980). It is equally apparent that attainment of these goals is often monitored through written assignments.

Dualistic students' writing will manifest little sense of another's world as differentiated from the writer's, so there is little need (from the writer's point of view) to articulate details or assumptions that clarify his or her frame of reference. To do this I must grasp that I HAVE a frame of reference; but at this level of development, I AM my frame of reference, for it is largely unquestioned. Thus for instance, when asked to argue a position on a controversial topic (as in Janice Hays' studies), dualistic students are likely to make unsupported assertions or rely on anecdotes or extended examples to support their claims, use a fairly emotional tone, and progress from idea to idea with little concern for the audience's need for transitional material (Hays, 1983). To improve writing at this stage, we must first or at least simultaneously deal with the cognitive structure and attempt to overcome the limitations it imposes. This will require some sense of how development takes place.

Given an appropriate level of maturation, developmental theory suggests that we develop when confronted with the inadequacies of our present knowledge structures or beliefs. Development results from our efforts to reconcile discrepancies between belief and experience--a process Piaget (1968) termed "equilibrium," or more commonly, "self-regulation." Applied to the Perry model, we see that in many college environments, the dualistic student's belief in "pure" or absolute knowledge is constantly contradicted. Students may be asked to write examinations and papers comparing two apparently equally valid points of view on a topic (and the instructor has remained poker-faced when asked to state her preference). Students fresh from a homogeneous environment encounter "good" people whose beliefs differ radically from their own--who may even be atheists or hispanics or democrats--forcing them to disentangle personal characteristics of others once linked together in stereotypic clusters.

The gradual movement chronicled by Perry, as well as parallel progressions reported by Piaget, Kohlberg, Gilligan, and other developmental psychologists, illustrates an important feature of this "discrepancy model" of cognitive

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development. Since stage sequences are considered to be invariant, one cannot jump over a stage or rearrange the sequence in which stage movement occurs. An individual at stage 3 of any model can only progress to stage 4. Furthermore, as Rest (1973) has shown in the case of Kohlberg's model, ideas or information representative of stage 5 cannot generally be understood by the stage 3 thinker, and so may be reinterpreted at ("assimilated to," in Piagetian terminology) a LOWER stage which may have some surface features in common with it. Sequental comprehension of Perry's positions has been demonstrated as well (Kurfiss, 1977). Thus for development to take place, students should be exposed to an optimal DEGREE of discrepancy between their expectancies (as codified in stages or positions) and the cognitive demands or structure inherent in their learning experiences.

The "optimal match" hypothesis suggests that instruction which is designed to challenge the students' current thinking structures will have the greatest impact on motivation and learning. Specifically, the optimal level of challenge is one "stage" or position above the students' present level. In Perry's model, this would mean helping the dualistic student understand and accept the possibility of multiple frames of reference. Initially this might be accomplished by asking students to rewrite an essay for several different audiences; later they can be assigned exercises requiring reading or listening to, and then summarizing a variety of opinions on a topic, emphasizing accuracy in reporting the evidence used to support each view and in clarifying relationships between main points and subordinate ideas. Journal writing would provide a complementary outlet for students' emotional responses to course material and its intellectual demands. Similarly, if a student accepts multiplicity, development would be facilitated in a setting that emphasizes "why" questions, gradually becoming more insistent on a well reasoned, documented rationale for a position held, thus further helping the student differentiate between a position and the argument for that position. Because efforts to encourage development may provoke feelings of anxiety, an open, supportive classroom environment is desirable to help students risk accepting the challenges posed to their accustomed ways of thinking. Practice in using emerging intellectual abilities, and feedback (not simply grades) from both the teacher and other students, will also help attenuate the risks involved.

From a developmental perspective, then, meaningful analysis of a learning experience is not in terms of content alone. Rather, it is in terms of epistemological assumptions inherent in the task or environment. Once those are identified and categorized, one can assess whether or to what degree the student is capable of responding appropriately, and what preparatory activities are most likely to help the student come to grips with "what you really want."

As the foregoing discussion suggests, one of the ways in which the college environment pressures students to accept a more pluralistic world-view is through its constant demands for thinking, discussion, and writing within a relativistic context. Perry found that over the 50 years preceeding his studies, the proportion of relativistic exam questions answered by students rose dramatically (1970). And as most educators know, examinations are powerful determinants of student's study behavior (Chickering & McCormick, 1970). One could easily argue, in fact, that students' world-views are "shaped" through reinforcement processes inherent in many college settings. This hypothesis would also receive support from findings that students in residential settings, where dialog about course material and other topics is commonplace, attain greater development than students who commute to college (Chickering, 1974). Conversation and feedback on papers and essay exams together appear to be highly effective in shaping a relativistic world-view. This is understandable when one considers the interdependent relationship between writing and thinking.

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Any writing task, taken seriously, compels the writer to think through a problem to some degree. Writers, even novice writers, often report making discoveries about the subject, seeing new relationships, and deepening their understanding through the writing process (Emig, 1979; Irmscher, 1979) The built-in challenge of the writing task is supported by the comforting concreteness of the marks on the page, in direct contrast to the inchoate universe within our heads, and the ephemeral musings of our internal monolog.

Conversely, to think through any idea thoroughly, most of us find it almost impossible to make progress without some written record of our thoughts. Having made such a record, we are in a better position to evaluate our own thinking, to tamper and experiment with it, and to pursue its further implications without fear of losing the original concept. No student should be deprived of the potential benefits of extensive, varied writing experience.

"Writing is limited in purpose only if we see it exclusively as a skill" (Irmscher, 1979, p. 241). In fact, writing may well be essential for the development of high levels of abstract, hypothetical, and relational reasoning. The hypothesis certainly deserves attention. Applebee (1981) reports that in public school, students spend only 2% of their time writing anything longer than a paragraph. What they do write tends to make few demands on their capacity for thinking and response. At the same time, we are seeing a dramatic decline in reasoning and communication skills of students. It does not seem unreasonable to consider these two phenomena to be related.

The lack of everyday, routine use of writing by students, and hence the lack of a consistent, continuing demand for thinking in any depth about a topic, may well be the major contributor to the skill deficits we see. Furthermore, when writing is required, it is generally for purposes of evaluating what students have already learned, rather than to help them master new material, integrate it into their own thinking, or discover significance within it. Without the tool of writing, and with the predominance of testing that emphasizes short-term memorization, it should come as no surprise that whatever students do learn in the classroom has little carryover to later achievement tests. But perhaps the final and most devastating consequence of our present practices with respect to writing is that students come to fear and dislike writing (or at least "school writing"), thus depriving themselves of a potential source of satisfaction, learning, and efficacy.

Students' intellectual development is fostered in an environment that encourages a dialectical interplay between reading, listening, speaking, and writing, all in the service of learning and thinking about what is learned. While the details of the relationship between writing and the development of reasoning abilities are currently the object of much study, it is safe to say that they are closely interrelated and mutually supportive processes, and that we neglect powerful opportunities to nurture students' intellectual capacities when we relegate writing to a back seat in the learning process. Coupled with an instructional design technology based on optimal developmental matching, wiser use of writing throughout the curriculum could stimulate intellectual growth to new levels in the next generation of learners at all educational levels.

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